



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,959	01/14/2002	Tim Forrester	UTL 00082	4413

7590 06/03/2004  
Kyocera Wireless Corp.,  
Attn: Patent Department  
PO Box 928289  
San Diego, CA 92192-8289

EXAMINER

MULL, FRED H

ART UNIT	PAPER NUMBER
----------	--------------

3662

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/046,959

Applicant(s)

FORRESTER, TIM

Examiner

Fred H. Mull

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,17-24,26-29 and 41-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,17-24,26-29 and 41-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Similar Claims in Applications***

1. Applicant is reminded of their responsibility to disclose the rejection of claims in an application(s) before a different examiner(s) that are substantially similar to the claims in the present application (*Dayco Products Inc. v. Total Containment Inc.*, 66 USPQ2d 1801).

### ***Drawings***

2. The drawings are objected to as indicated in the Notice of Draftperson's Patent Drawing Review. Corrected formal drawings are required in reply to this Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

## **INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

### **Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment. Any replacement drawing sheet must be identified in the top margin as "Replacement Sheet" and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Art Unit: 3662

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheets must be clearly labeled as "Annotated Marked-up Drawings" and accompany the replacement sheets.

### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

### ***Response to Arguments***

3. Applicant's arguments on p. 12, with respect to the rejection(s) over Tsujimoto have been fully considered and are persuasive. The rejection(s) of these claims have been withdrawn.

4. Applicant's arguments on p. 13-15, with respect to the rejection(s) of currently pending claims 17-19 over Garin have been fully considered but they are not persuasive.

On p. 14, applicant lists three methods disclosed by Garin which do not meet the requirement of checking to see if network assisted positioning data is available, and using it if it is. However, none of the citations include the method cited by the examiner. Garin states: "The multimode architecture of the present invention allows for an automatic seamless and reliable response, by **taking advantage of the network assists if and when available**, and allows the system to operate independently **if the assistance is not available** or not available in a timely manner." (col. 9, lines 4-9). The plain meaning of this sentence is that the receiver checks to see if assistance is available, and uses the assistance if it is available.

Applicant states: "Because Garin teaches different methods for selecting between multiple operational modes than that used by claim 17, Garin cannot render claim 17 obvious." (p. 14, last paragraph). However, even though Garin discloses different possible methods of usage, one method will be used at any given time, and that could be the one cited by the examiner. Users could choose one method and use it exclusively, even though there are other methods available. Additionally, one looking at Garin for ideas known in the art would see the method cited by the examiner, and would realize that the method does not have to be used with the other alternate methods Garin discloses.

5. Applicant's arguments on p. 15, with respect to the rejection(s) of currently pending claims 17-19 over Garin in view of Syrjarinne have been fully considered but they are not persuasive.

As stated in the section immediately above, the examiner believes Garin teaches the multi-modal operation required by the claim language.

6. Applicant's arguments on p. 17-18, with respect new independent claim 41 have been fully considered but they are not persuasive.

Applicant argues that the addition of the limitation to a common IF block distinguishes the claim from the prior art. However, the addition of Breems makes this feature obvious.

#### ***Claim Objections***

7. Claim 24 is objected to because of the following informalities:

In line 2, "configure" should be --configured--.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin.

In regard to claim 17, Garin discloses receiving a request for position information, activating the GPS receiver, receiving the GPS signals, and determining the position of the device (col. 9, lines 25-28), where dialing 911 includes requesting position to send to the emergency call center. Throughout the disclosure, Garin describes a device that

does not determine position regularly, but in specific circumstances, like a 911 call or when a user would like directions to a location. When a user chooses to call 911, request directions, etc., these all involve a request for position, as opposed to a device that regularly determines position so that it is available when it is wanted.

Garin further discloses the device configured to act as a standalone GPS receiver or to act as a network assisted GPS receiver when it is determined that network assistance is available from the wireless communication network (col. 9, lines 4-9).

Garin further discloses disabling the wireless receiver link before the GPS receiver is activated if assistance data has already been received (col. 9, lines 13-17). Garin fails to suggest disabling the wireless receiver once assistance data has been determined to not be present.

Garin suggests disabling components that are not in use in the case of the wireless receiver when not needed because assistance data is already available (col. 9, lines 13-17) and in the case when the GPS receiver is not in use (col. 10, lines 21-23).

It is well known in the art to disable components of a mobile wireless device that are not in use in order to save the limited power that can be stored in the device's battery. While Garin does not take the further step of disabling the wireless receiver when no assistance data is available, one of ordinary skill in the art would recognize from Garin's teaching or disabling it when assistance data is needed because it is already available that the essence of the teaching is to disable the wireless receiver when it is not being used. When no assistance information is available, the wireless

receiver is not being used. It follows so naturally from what Garin has said and is so common sense to one of ordinary skill in the art to disable the wireless receiver when no assistance data is available that Garin does not even think to put it into words.

In regard to claim 18, Gain further discloses processing network assist information related to received GPS signals; and determining a position of the device based at least in part on the processed network information (col. 6, line 55 to col. 6, line 22).

In regard to claim 19, it is well known to load instructions into an electronic device memory from storage when the device is powered up.

9. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin in view of Syrjarinne.

In regard to claim 17, Garin discloses receiving a request for position information, activating the GPS receiver, receiving the GPS signals, and determining the position of the device (col. 9, lines 25-28), where dialing 911 includes requesting position to send to the emergency call center. Throughout the disclosure, Garin describes a device that does not determine position regularly, but in specific circumstances, like a 911 call or when a user would like directions to a location. When a user chooses to call 911, request directions, etc., these all involve a request for position, as opposed to a device that regularly determines position so that it is available when it is wanted.

Garin further discloses the device configured to act as a standalone GPS receiver or to act as a network assisted GPS receiver when it is determined that



Art Unit: 3662

network assistance is available from the wireless communication network (col. 9, lines 4-9).

Garin further discloses disabling the wireless receiver link before the GPS receiver is activated if assistance data has already been received (col. 9, lines 13-17). Garin fails to suggest disabling the wireless receiver once assistance data has been determined to not be present.

Garin suggests disabling components that are not in use in the case of the wireless receiver when not needed because assistance data is already available (col. 9, lines 13-17) and in the case when the GPS receiver is not in use (col. 10, lines 21-23).

Syrjarinne teaches disabling components of a mobile wireless device when they are not in use in order to save battery power (paragraph 13-14).

Based on Garin's disclosure of power savings, one of ordinary skill in the art would look to other known power savings means/methods, and would be lead to Syrjarinne, who teaching generally to disable components of a mobile wireless device that are not in use. Since, when it has been determined that assistance data is unavailable, the wireless receiver is not in use, it would have been obvious to disable it until it needs to be used.

In regard to claim 18, Gain further discloses processing network assist information related to received GPS signals; and determining a position of the device based at least in part on the processed network information (col. 6, line 55 to col. 6, line 22).

In regard to claim 19, it is well known to load instructions into an electronic device memory from storage when the device is powered up.

10. Claims 1, 3-4, 28, and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, previously cited, in view of Krasner '363, previously cited, and Breems.

In regard to claim 41, Garin discloses:

a wireless communication transceiver configured to allow the wireless communication device to interface with a wireless communication network via a communications band (200, Fig. 2; col. 2, lines 45-57; col. 5, lines 13-17);

a GPS receiver configured to receive GPS signals (202); and

the wireless communication device configured to act as a standalone GPS receiver or to act as a network assisted GPS receiver when it is determined that network assistance is available from the wireless communication network (col. 9, lines 4-9).

Garin fails to disclose a common demodulation circuit or a common IF block.

Garin discloses that: "the CP section and the GPS section can share the same digital processor and other circuitry." (col. 5, lines 34-36). While Garin does not specify what this other circuitry that is shared is, Krasner '363 discloses common demodulation circuit configured to demodulate both the received GPS signals and the received wireless communication signals (col. 2, lines 46-51; 459; Fig. 1A). It would have been obvious to use the known combined GPS/wireless communication demodulator of

Krasner '363 as shared circuitry in Garin, as motivated by Garin's statement quoted above. Krasner '363 also discloses a common A/D converter (463).

Krasner '363 fails to disclose a common IF block. However, Krasner '363 does not disclose the details of his A/D converter. Breems discloses an A/D converter that downconverts from IF to baseband before digitizing (p. xiii, last paragraph; p. 25, p. 73-108). Breems teaches using such an A/D converter because such integration results in high-performance which can be realized at low power consumption (p. 6, section 1.4). Thus, the A/D converter includes the common IF block.

In regard to claim 1, Garin further discloses a processor coupled with the GPS and wireless communication receivers via the common IF block (col. 5, lines 34-36), the processor configured to fully process the wireless communication signals (col. 5, lines 13-17) and GPS signals (col. 6, lines 33-43), such that the wireless communication device can act as a standalone GPS receiver. Krasner '363 discloses a common processor (10, Fig. 1A).

In regard to claim 3, Garin further discloses the processor is further configured to process network assist information related to the received GPS signals and to determine a position of the wireless communication device based at least in part on the processed network assist information (col. 6, line 55 to col. 7, line 32).

In regard to claim 4, Garin discloses that: "the CP section and the GPS section can share the same digital processor and other circuitry." (col. 5, lines 34-36). While Garin does not specify what this other circuitry that is shared is, Krasner '363 discloses a single antenna coupled with a GPS receiver and a wireless communication receiver

Art Unit: 3662

(col. 2, lines 21-25). It would have been obvious to use the known combined GPS/wireless communication antenna of Krasner '363 as shared circuitry in Garin, as motivated by Garin's statement quoted above.

In regard to claim 28, Krasner '363 further discloses a dual band local oscillator coupled with the common demodulator, wherein the local oscillator is capable of generate the correct frequency depending on whether the GPS receiver or the wireless communication receiver is coupled with the common demodulator (col. 5, lines 9-21). A VCO is a well known local oscillator.

In regard to claim 42, it is well known that electronic devices, such as wireless communication devices, require a memory to store instructions that are to be used to operate the device.

In regard to claim 43, it is well known that electronic devices, such as GPS devices, require a memory to store instructions that are to be used to operate the device. Garin and Krasner '363 teach the benefits of integrating components that can be shared. It would have been obvious to share the memory space needed to store operating instructions.

In regard to claim 44, Garin discloses receiving a request for position information, activating the GPS receiver, receiving the GPS signals, and determining the position of the device (col. 9, lines 25-28), where dialing 911 includes requesting position to send to the emergency call center. Throughout the disclosure, Garin describes a device that does not determine position regularly, but in specific circumstances, like a 911 call or when a user would like directions to a location. When a user chooses to call 911,

request directions, etc., these all involve a request for position, as opposed to a device that regularly determines position so that it is available when it is wanted.

Garin further discloses the device configured to act as a standalone GPS receiver or to act as a network assisted GPS receiver when it is determined that network assistance is available from the wireless communication network (col. 9, lines 4-9).

Garin further discloses disabling the wireless receiver link before the GPS receiver is activated if assistance data has already been received (col. 9, lines 13-17). Garin fails to suggest disabling the wireless receiver once assistance data has been determined to not be present.

Garin suggests disabling components that are not in use in the case of the wireless receiver when not needed because assistance data is already available (col. 9, lines 13-17) and in the case when the GPS receiver is not in use (col. 10, lines 21-23).

It is well known in the art to disable components of a mobile wireless device that are not in use in order to save the limited power that can be stored in the device's battery. While Garin does not take the further step of disabling the wireless receiver when no assistance data is available, one of ordinary skill in the art would recognize from Garin's teaching or disabling it when assistance data is needed because it is already available that the essence of the teaching is to disable the wireless receiver when it is not being used. When no assistance information is available, the wireless receiver is not being used. It follows so naturally from what Garin has said and is so

common sense to one of ordinary skill in the art to disable the wireless receiver when no assistance data is available that Garin does not even think to put it into words.

In regard to claim 45, Garin further discloses the processor is further configured to receive network assist information from the wireless communication network using the wireless communication transceiver, if network assistance is available, and process network assist information (col. 6, line 55 to col. 6, line 22).

11. Claims 20-21, 24, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, and Breems as applied to claims 4 or 41 in view further of Leisten.

In regard to claim 24, Garin discloses that: "the CP section and the GPS section can share the same digital processor and other circuitry." (col. 5, lines 34-36). While Garin does not specify what this other circuitry that is shared is, Leisten discloses an integrated GPS/wireless communication receiver with shared circuitry (Fig. 8). It would have been obvious to use the known shared GPS/wireless communication circuitry of Leisten as shared circuitry in Garin, as motivated by Garin's statement quoted above.

Leisten further discloses that the shared circuitry includes a diplexer (2', Fig. 8) configured to couple an antenna to a GPS receiver (4') when receiving GPS signals and to a wireless communication receiver (5') when receiving wireless communication signals (p. 6, line 22 to p. 7, line 15).

In regard to claim 20, one of ordinary skill in the art would recognize that a switching module that connects an input port to one of two output ports is functionally equivalent to a diplexer.

In regard to claim 21, Leisten further discloses an antenna matching network configured to match the impedance of the GPS receiver with the antenna when the switching module is positioned to connect the GPS receiver with the antenna (p. 7, lines 1-5; p. 16, lines 5-7).

In regard to claims 27, Krasner '363 further discloses a switch configured to selectively couple the GPS receiver and the wireless communication receiver to the common antenna and demodulator (6, Fig. 1A).

In regard to claims 29, one of ordinary skill in the art would recognize that a diplexer is functionally equivalent to a switch that connects an input port to one of two output ports.

12. Claims 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, Breems, Leisten, previously cited, and as applied to claims 4 or 20 in view further of Bork.

Bork discloses the use of multiple wireless communications devices broadcasting on unique communication bands in a single communication device (Fig. 3) so that it can communicate with devices that have either interface (col. 3, lines 29-34). It would have been obvious to include this capability to expand the utility of a wireless device to work in different ones of the myriad of wireless communication systems that are being used

nowadays, including multiple cellular/PCS standards. It would be obvious to switch additional devices in the same matter the GPS device and wireless communication devices are already being switched.

13. Claims 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, Breems, Leisten, previously cited, and as applied to claims 4 or 20 in view further of Haartsen.

Haartsen discloses the use of multiple wireless communications devices broadcasting on unique communication bands in a single communication device so that the most inexpensive means of communication available can be used (Box C, first paragraph). It would have been obvious to include this capability to expand the utility of a wireless device to work in different ones of the myriad of wireless communication systems that are being used nowadays, including multiple cellular/PCS standards, and to reduce usage fees. It would be obvious to switch additional devices in the same matter the GPS device and wireless communication devices are already being switched.

14. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, and Breems, as applied to claims 4 and 12, and further in view of Standke, previously cited.

In regard to claim 20, Garin discloses that: "the CP section and the GPS section can share the same digital processor and other circuitry." (col. 5, lines 34-36). While



Garin does not specify what this other circuitry that is shared is, Standke discloses an integrated GPS/wireless communication receiver with shared circuitry (Fig. 2). It would have been obvious to use the known shared GPS/wireless communication circuitry of Standke as shared circuitry in Garin, as motivated by Garin's statement quoted above.

Standke further discloses a switching module configured to couple the antenna to the GPS receiver when receiving GPS signals and to the wireless communication receiver when receiving wireless communication signals (15, Fig. 2).

In regard to claim 21, Standke further discloses an antenna matching network configured to match the impedance of the GPS receiver with the antenna when the switching module is positioned to connected the GPS receiver with the antenna (paragraph 8 and 30).

15. Claims 22-23, 26, and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, Breems, and Standke, as applied to claims 4 and 20, and further in view of Bork.

In regard to claims 22 and 26, Bork discloses the use of multiple wireless communications devices broadcasting on unique communication bands in a single communication device (Fig. 3) so that it can communicate with devices that have either interface (col. 3, lines 29-34). It would have been obvious to include this capability to expand the utility of a wireless device to work in different ones of the myriad of wireless communication systems that are being used nowadays, including multiple cellular/PCS

standards. It would be obvious to switch additional devices in the same matter the GPS device and wireless communication devices are already being switched.

In regard to claims 23, Standke further discloses the device further discloses a diplexer (17). It would have been obvious to include additional port for additional wireless communication transceivers.

In regard to claim 46, it would be obvious for an additional device to have an additional demodulation circuit.

In regard to claim 47, it would be obvious for an additional device to share circuitry with the other devices, including the common IF block, which mixes signals to baseband.

16. Claims 22-23, 26 and 46 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garin, Krasner '363, Breems, and Standke, as applied to claims 4 and 20, and further in view of Haartsen.

In regard to claims 22 and 26, Haartsen discloses the use of multiple wireless communications devices broadcasting on unique communication bands in a single communication device so that the most inexpensive means of communication available can be used (Box C, first paragraph). It would have been obvious to include this capability to expand the utility of a wireless device to work in different ones of the myriad of wireless communication systems that are being used nowadays, including multiple cellular/PCS standards, and to reduce usage fees. It would be obvious to

switch additional devices in the same matter the GPS device and wireless communication devices are already being switched.

In regard to claims 23, Standke further discloses the device further discloses a diplexer (17). It would have been obvious to include additional port for additional wireless communication transceivers.

In regard to claim 46, it would be obvious for an additional device to have an additional demodulation circuit.

In regard to claim 47, it would be obvious for an additional device to share circuitry with the other devices, including the common IF block, which mixes signals to baseband.

17. The examiner also finds the following reference(s) relevant:

van der Zwan and Leung (p. 424, section 4.3.2.2 and its subsections), which discuss A/D converters that mix IF to baseband.

Tsujimoto, which discusses a GPS/wireless communication device with an aiding determinator and integrated GPS/wireless communication components.

Greenspan, which teaches a diplexer and a one input two output switch as being functionally equivalent (43, Fig. 2).

Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

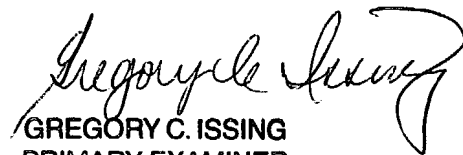
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 703-305-1250. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 703-360-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull  
Examiner  
Art Unit 3662

fhm

  
GREGORY C. ISSING  
PRIMARY EXAMINER